

WHAT IS CLAIMED IS:

1. A color image forming apparatus comprising:  
a sensor adapted to detect chromaticity of a  
patch to be formed on a transferring medium;  
5 a correcting unit adapted to perform shading  
correction of an output from said sensor; and  
a calculating unit adapted to calculate a  
shading correction value of said correcting unit  
based on a detected value obtained by said sensor's  
10 detecting a patch for calculation of the shading  
correction value to be formed on a transferring  
material.
2. A color image forming apparatus according to  
15 claim 1, wherein the patch for calculation of the  
shading correction value is a black toner patch whose  
optical density is equal to or more than one (or 1).
3. A color image forming apparatus according to  
20 claim 1, wherein said sensor is a sensor comprised of  
a light source having an emission spectrum ranging  
over overall visible light, and at least three sets  
of pixels provided with respective filters having  
respective spectral characteristics, and said  
25 calculating unit obtains such correction coefficients  
that outputs from said respective pixels of said  
sensor can satisfy a predetermined output ratio

calculated from the emission spectrum of said light source, spectral sensitivity of said sensor, spectral transmissivities of said respective filters, and spectral reflectivity of toner.

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4. A color image forming apparatus according to claim 1, wherein said sensor is a sensor comprised of a light source having an emission spectrum ranging over overall visible light, spectrum-obtaining means, and a plurality of pixels for receiving spectral light obtained by said spectrum-obtaining means, and said calculating unit obtains such correction coefficients that outputs from said respective pixels of said sensor can satisfy a predetermined output ratio calculated from the emission spectrum of said light source, spectral sensitivity of said sensor, spectral reflectivity of toner, and wavelength ranges of light incident on said respective pixels, and corrects the output of said sensor using the correction coefficients during operation for detecting color tint of an image formed on the transferring medium.

5. A color image forming apparatus according to claim 1, wherein said sensor is a sensor comprised of at least three light sources having respective different emission spectra, and a pixel or at least

two pixels having equal spectral sensitivity, and said calculating unit obtains such individual correction coefficients that outputs from said respective pixels of said sensor corresponding to said respective light sources can satisfy a predetermined output ratio calculated from the emission spectra of said light sources, spectral sensitivity of said sensor, and spectral reflectivity of toner.

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6. A color image forming apparatus according to claim 1, wherein said sensor is a sensor whose amplification factor during operation for converting incident light into a voltage is variable, or a sensor in which a voltage obtained by conversion from incident light is amplified by an amplifier with a variable amplification factor, and the amplification factor is set to a relatively large value during operation for obtaining shading correction information of said sensor, and is set to a relatively small value during operation for detecting color tint of an image formed on the transferring material.

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7. A color image forming apparatus according to claim 1, wherein said sensor is a charge storage sensor which reads charge generated by incident light

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after charge storage for a predetermined time, and storage time is set to a relatively long time during operation for shading correction of said sensor, and is set to a relatively short time during operation  
5 for detecting color tint of an image formed on the transferring material.

8. A color image forming apparatus according to claim 1, further comprising a plurality of image  
10 forming portions adapted to form images of different colors; a transferring portion adapted to transfer the images formed by said image forming portions to the transferring material to form a color image on the transferring material; and an adjusting portion  
15 for adjusting color image forming conditions of said image forming portions based on an output value of said sensor corrected by said correcting unit.

9. A shading correction method for a sensor for  
20 detecting chromaticity of a patch to be formed on a transferring medium by a color image forming apparatus, said shading correction method comprising:

a first detecting step of detecting, by the sensor, a patch for calculation of a shading  
25 correction value to be formed on a transferring medium by the color image forming apparatus;

a calculating step of calculating the shading

correction value of a correcting unit based on a detected output obtained in said first detecting step;

5 a second detecting step of detecting a patch for adjustment of color image forming conditions;

a correcting step of correcting an output of the sensor obtained in said second detecting step based on the shading correction value; and

10 a setting step of setting the color image forming conditions based on a corrected output obtained in said correcting step.